



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,639	02/19/2004	Steven P. Heffner	WAB 04037	4128

7590 11/29/2004  
JAMES RAY & ASSOCIATES  
2640 Pitcairn Road  
Monroeville, PA 15146

EXAMINER
----------

STRIMBU, GREGORY J

ART UNIT	PAPER NUMBER
----------	--------------

3634

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/782,639

Applicant(s)

HEFFNER ET AL.

Examiner

Gregory J. Strimbu

Art Unit

3634

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 2-11 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-11 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the sliding door, beam or rod, drive nut bracket, and rollers must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

The drawings are objected to because it is unclear how the doors can be in a closed position in figure 1 if the drive nut assemblies are not engaged with the semi-circular tubes 44L and 44R to move the doors transversely relative to

---

Art Unit: 3634

the axis of the drive shafts 52L and 52R as the doors are opened. It is unclear what the center 34 in figure 1 comprises. It is suggested that the applicant show and describe in greater detail the interaction of the drive nuts with respect to the semi-circular tubes to avoid confusion. Finally, the applicant should submit new drawings showing the invention in greater detail. In other words, the new drawings should be of a better quality than the current drawings.

The drawings are objected to because reference character 10 in figure 1 has no lead line. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

---

Art Unit: 3634

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description: 56. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

---

Art Unit: 3634

The abstract of the disclosure is objected to because it does not describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details. It is suggested that the applicant amend the abstract to include the plug door system. Correction is required. See MPEP § 608.01(b).

The disclosure is objected to because of the following informalities:

"communication torsion" on line 13 of page 7 is grammatically awkward and confusing. It appears that "44R" on line 13 of page 7 should be changed to --45L-- and that "40L" on line 15 of page 7 should be changed to --48L--. On line 20 of page 7, "46R (not shown)" is confusing since it is unclear why the applicant has given an element that is not shown a reference character. On line 23 of page 7, "40R is now shown" is awkward and confusing. On line 26 of page 7, "rollers. . . 24R" is confusing since the rollers are not shown in the drawings. Lines 8-10 of page 8 are grammatically awkward and confusing since they do not form a complete sentence. On lines 14 and 19 of page 9, "the nut housing" is confusing since it is unclear which nut housing the applicant is referring to. On line 19 of page 9, it is suggested that the applicant include a reference character for the end cap and amend the drawings accordingly. On line 1 of page 10, "the drive nut housing" is confusing since it is unclear which one of the drive nut housings the applicant is referring to. On line 2 of page 10, "the semicircular tube" is confusing since it is unclear which one of the semicircular tubes the applicant is referring to. On lines 5-7 of page 10, "[w]hen . . . to rotate" is confusing since it is unclear how the curved track roller allows the drive nut housing to rotate. Finally,

---

Art Unit: 3634

the specification is objected to because it fails to adequately describe the invention. For example, it is unclear how the drive nuts interact with the semi-circular tubes to drive the gearing and links to move the carriage. Note that it is unclear how the elongated semi-circular tubes are attached, if at all, to the rotating center and the frame. Additionally, it is unclear how the drive nuts rotate the pinions. It appears that the axial movement of the drive nuts would have to be prevented in order for the rotational movement of the drive screws to be transmitted to the pinions. However, exactly how the axial movement of the drive nuts is prevented is unclear. Is the axial movement prevented by the interaction of the drive nuts with the semi-circular tubes? If so, how?

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. It is suggested that the applicant amend the title to include a plug door operator for the transmission of torsional and axial forces. See claim 2.

### ***Claim Rejections - 35 USC § 112***

Claims 2-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Recitations such as "or" on line 4 of claim 2 render the claims indefinite because it is unclear which one of the non-equivalent alternatives the applicant is positively setting forth. Recitations such as "a drive nut axial force" on line 7 of claim 2 are confusing since it is unclear how a drive nut can receive a force

---

Art Unit: 3634

created by itself. It is suggested that the applicant change recitations such as "drive nut axial force" on line 7 of claim 2 to --drive screw axial force-- to avoid confusion. Lines 12-16 of claim 2 are confusing since it is unclear how the torsion receiving device and the carriage displacing means are operatively interconnected. Lines 14-16 of claim 2 are confusing since it is unclear whether or not the applicant intends to invoke 35 USC 112, sixth paragraph. It is suggested that the applicant more clearly invoke 35 USC 112, sixth paragraph by amend lines 14-16 of claim 2 to recite -- means connected to the torsion receiving device for selectively receiving the drive nut torsion for moving the carriage into and out of the opening in the sidewall--. Recitations such as "moving said carriage . . . said opening" on line 15 of claim 2 render the claims indefinite because it is unclear whether or not the applicant is reciting the subcombination of a door system or the combination of a door system and a vehicle. The preamble of claim 2 implies the subcombination while the positive recitation of the opening of the vehicle implies the combination. Recitations such as "a said" on line 15 of claim 2 render the claims indefinite because they are grammatically awkward and confusing. Recitations such as "a curved track" on line 17 of claim 2 render the claims indefinite because it is unclear if the applicant is referring to the track set forth above or is attempting to set forth another track in addition to the one set forth above. Recitations such as "axially" on line 18 of claim 2 render the claims indefinite because it is unclear which direction is an axial direction of a door. Recitations such as "a second axial direction" on line 3 of claim 3 render the claims indefinite because the applicant has failed to set

---

Art Unit: 3634

forth a first axial direction. Recitations such as "a second axial direction, opposite to said first sliding door" on lines 3-4 of claim 3 render the claims indefinite because it is unclear how the second sliding door can be moved in a direction opposite to a stationary sliding door. Recitations such as "opposite to said first drive screw" on lines 4-5 of claim 3 render the claims indefinite because it is unclear what characteristic of the first drive screw the applicant is comparing the pitch to. Recitations such as "connected to" on line 5 of claim 3 render the claims indefinite because it is unclear what element of the invention the second drive screw is connected to. Recitations such as "said drive screw" on line 7 of claim 3 render the claims indefinite because it is unclear which one of the drive screws set forth above the applicant is referring to. Recitations such as "a second carriage displacing means" on lines 10-11 of claim 3 render the claims indefinite because the applicant has attempted to use a "means" clause to recite a claim element as a means for performing a specified function. However, since no function is specified by the word(s) preceding or following "means," it is impossible to determine the equivalents of the element, as required by 35 U.S.C. 112, sixth paragraph. See *Ex parte Klumb*, 159 USPQ 694 (Bd. App. 1967). Recitations such as "said door first move outwardly" on line 3 of claim 4, "move . . . directions" on line 4 of claim 4, and "pinions" on line 2 of claim 6 render the claims indefinite because they are grammatically awkward and confusing. Recitations such as "said links" on line 1 of claim 11 render the claims indefinite because the applicant has only set forth one link above.

---

***Allowable Subject Matter***

Claims 2-11 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, absent applicant's own disclosure, fails to teach the entire combination of elements set forth in the claimed invention. Specifically, the prior art of record fails to teach a plug door system comprising a sliding door, a carriage for supporting the sliding door, a rotary power supply, a drive screw connected to the rotary supply, a drive nut engaging the drive screw to receive a drive screw axial force and a drive screw torsional force from the drive screw, a drive nut bracket engaging the drive nut to receive the drive screw axial force via the drive nut, the drive nut bracket attached to the sliding door, a torsion receiving device selectively connected to the drive nut to receive the drive nut torsion therefrom, a means connected to the torsion receiving device for selectively receiving the drive nut torsion for moving the carriage into and out of the opening in the sidewall, a curved track to guide the sliding door so that when the door is opened, the carriage and door are adapted to move out of the opening and then the door is adapted to move along and parallel to the sidewall of the transit vehicle.

It is recommended that the applicant amend claim 2 to substantially mirror the language above to place the case into a condition for allowance. The claim as currently written fails to accurately recite the patentable feature of the invention. More specifically, the claim as currently written fails to accurately

---

Art Unit: 3634

recite the drive nut bracket attached to the sliding door, a torsion receiving device selectively connected to the drive nut to receive the drive nut torsion therefrom, and a means connected to the torsion receiving device for selectively receiving the drive nut torsion for moving the carriage into and out of the opening in the sidewall which patentably defines the invention over the prior art of record.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Goldbach, Favré, Smink et al., Dilcher '625 and '280, Sohlstrom, Simmons, Carlsson et al., Heidrich et al., Krbec et al., Zweili, Pietro and Heidrich et al. are cited for disclosing a plug door operating system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory J. Strimbu whose telephone number is 703-305-3979. The examiner can normally be reached on Monday through Friday 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lanna Mai can be reached on 703-308-2486. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

---

Art Unit: 3634

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "Gregory J. Strimbu", written over the printed name.

Gregory J. Strimbu  
Primary Examiner  
Art Unit 3634  
November 24, 2004

---